To our customers,

Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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M34553T-PTCB

Converter Board for 48-pin 0.5-mm-pitch LQFP (4553 Group)

User's Manual

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⚠ **CAUTION**	If the requirements shown in the "CAUTION" sentences are ignored, the equipment may cause personal injury or damage to the products.

Renesas Tools Homepage http://www.renesas.com/en/tools

1. Outline

The M34553T-PTCB is a converter board for connecting the M34552T2-CPE to a 48-pin 0.5-mm-pitch LQFP (48P6Q-A) foot pattern (4553 Group) with the M34553T-PTCA.

2. Components (See Figure 1)

(1)	M34553T-PTCB converter board	x 1
(2)	YQPACK048SD (made by Tokyo Eletech Corporation)	x 1
(3)	NQPACK048SD (made by Tokyo Eletech Corporation)	x 1
(4)	YQ-GUIDE's (made by Tokyo Eletech Corporation)	x 4
(5)	User's manual (This manual)	x 1
(6)	User's manual (Japanese)	x 1

3. Specifications

Table 1 Specifications

Applicable package	48P6Q-A (48-pin 0.5-mm-pitch LQFP)
Insertion/removal iterations of connector	20 times

4. Usage (See Figure 2)

You can use the M34553T-PTCB for debugging and board mounted evaluation in common by mounting the NQPACK048SD on the target board.

1. For debugging
   Mount the NQPACK048SD and the YQPACK048SD in that order on a foot pattern of the target system. Then attach the YQ-GUIDE's and M34553T-PTCB to the YQPACK048SD. Lastly, connect the M34553T-PTCA to the M34553T-PTCB.

2. For board-mounted evaluation
   Mount an MCU with PROM (OTP) and the HQPACK048SD (not included) on the NQPACK048SD on the target system. Then secure them with the screws.

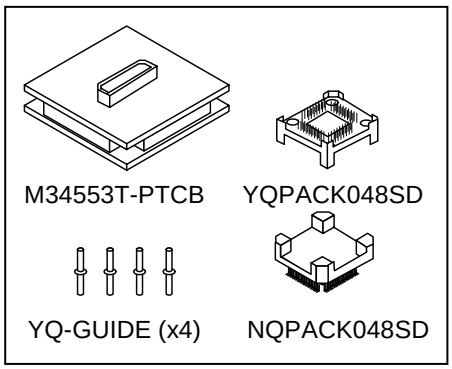

Figure 1 Package Components

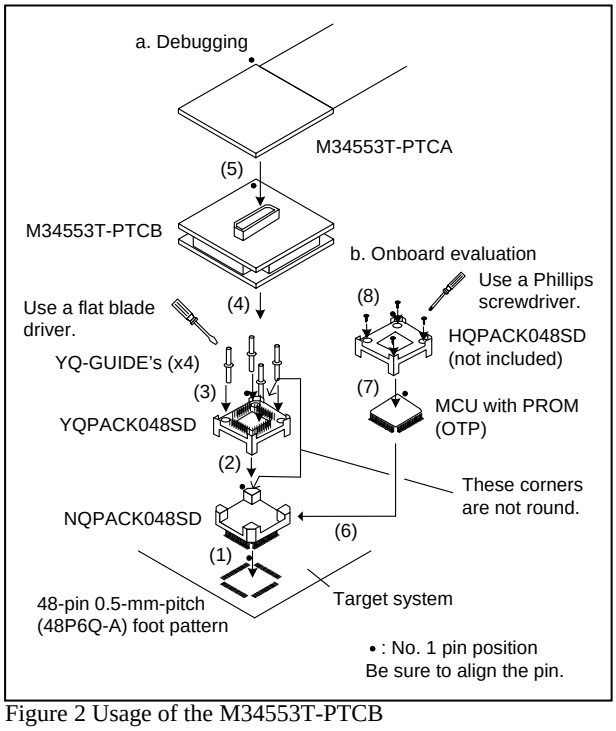

Figure 2 Usage of the M34553T-PTCB

5. Connection Procedure (See Figure 3)

3. Mount the NQPACK048SD.
4. Attach the YQPACK048SD on the NQPACK048SD.
5. Secure the four corners of the YQPACK048SD with the YQ-GUIDE's.

- **Do NOT use the screws included with the YQPACK048SD for securing it.**
- **Do NOT use the driver included with the NQPACK048SD for securing the YQ-GUIDE's. It is used for securing the HQPACK048SD.**

6. Attach the M34553T-PTCB to the YQPACK048SD.
7. Connect the M34553T-PTCA converter board to the M34553T-PTCB.

Before using the M34553T-PTCB, be sure to read "7. Precautions" on page 4.

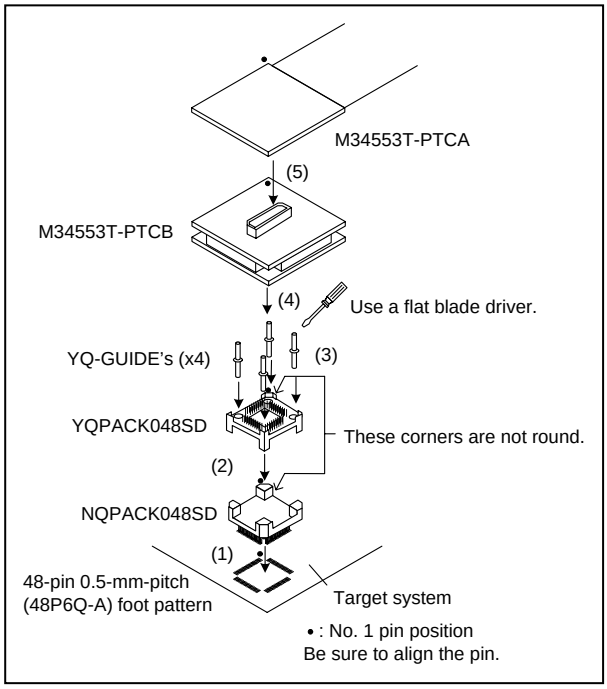

Figure 3 Connection procedure of the M34553T-PTCB

6. External Dimensions and a Sample Foot Pattern (see Figure 4)

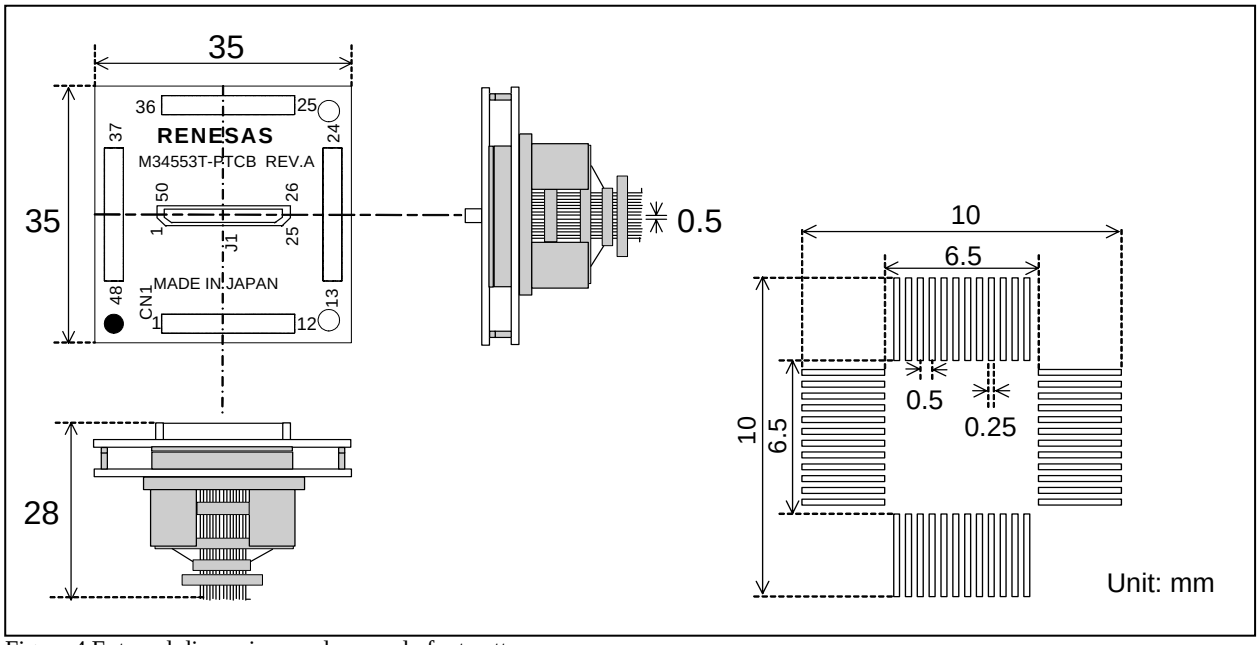

Figure 4 External dimensions and a sample foot pattern

7. Precautions

⚠ CAUTION

Cautions to Be Taken for Handling This Product:

- Be sure to align the pins when connecting the M34553T-PTCB.
- Do not apply excessive stress to the M34553T-PTCB main unit.
- To attach the M34553T-PTCB, be sure to use the YQ-GUIDE's included with this product.
- Do not use the screws included with the YQPACK048SD for securing it.

IMPORTANT

Regarding This Product:

- We cannot accept any request for repair.
- For purchasing the NQPACK048SD, YQPACK048SD and HQPACK048SD, contact the following:
  Tokyo Eletech Corporation
  http://www.tetc.co.jp/
- For inquiries about this product or the contents of this manual, contact your local distributor.
  Renesas Tool Homepage http://www.renesas.com/en/tools

8. Correspondence of Connectors J1, J2

Table 2 lists the correspondence of the M34553T-PTCB and NQPACK.

Table 2 Correspondence of the M34553T-PTCB and NQPACK

Pin number of connector J1	NQPACK	Signal	Pin number of connector J1	NQPACK	Signal
1	41	SEG12	26	NC	NC
2	42	SEG13	27	45	D5/INT
3	19	XIN	28	46	P20/SEG17
4	20	XOUT	29	47	P21/SEG18
5	21	CNVSS	30	48	P22/SEG19
6	22	XCIN/D6	31	1	P23/SEG20
7	23	XCOUT/D7	32	2	P00/SEG21
8	24	RESET*	33	3	P01/SEG22
9	25	COM0	34	4	P02/SEG23
10	26	COM1	35	5	P03/SEG24
11	27	COM2	36	6	P10/SEG25
12	28	COM3	37	7	P11/SEG26
13	29	SEG0/VLC3	38	8	P12/SEG27
14	30	SEG1/VLC2	39	9	P13/SEG28
15	31	SEG2/VLC1	40	10	D0
16	32	SEG3	41	11	D1
17	33	SEG4	42	12	D2
18	34	SEG5	43	13	D3
19	35	SEG6	44	14	D4
20	36	SEG7	45	15	D5/INT
21	37	SEG8	46	16	C/CNTR
22	38	SEG9	47	17	VDD
23	39	SEG10	48	18	VSS
24	40	SEG11	49	43	SEG14
25	NC	NC	50	44	SEG15

(NC: No connection)